

van Lengerich - Serial No. 09/233,443
AMENDMENT AFTER FINAL REJECTION UNDER 37 C.F.R. 1.116
AND SUMMARY OF TELEPHONIC INTERVIEW WITH EXAMINER

IN THE CLAIMS:

The following claim amendments are identical to those in the first Amendment After Final Rejection filed on June 5, 2003. The Examiner indicated in the Advisory Action that these claim amendments would be entered.

Please cancel non-elected Claims 1-20, 23-25, 27, 30-45, 56, 58, and 68-95, without prejudice to or disclaimer of the subject matter therein.

Please amend Claims 21-22, 26, 46, and 103 and add new Claims 107-109 as follows. A complete list of claims presented during prosecution follows:

1-20. (Canceled)

21. (Currently Amended) An encapsulated product comprising a substantially homogeneous mixture of:

at least one plasticized matrix material comprising a durum ingredient; about 1% by weight to about 85 % by weight of an encapsulant, based upon the weight of the matrix material, wherein the encapsulant that is at least substantially uniformly distributed in said at least one plasticized matrix material, said encapsulant being at least one component selected from the group consisting of a pharmaceutical component, neutraceutical component, nutritional component, flavor component, fragrance component, and biologically active component; and

a hydrophobic agent for controlling the rate of release of the encapsulant, wherein said encapsulated product is in substantially non-expanded, particulate form.

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22. (Currently Amended) An encapsulated product as claimed in claim 21 wherein said encapsulant comprises at least one member selected from the group consisting of enzymes, vitamins, micronutrients, and live microorganisms.

23-25. (Canceled)

26. (Currently Amended) An encapsulated product according to claim 21, wherein said encapsulant is at least one member selected from the group consisting of antioxidants, phytochemicals, hormones, vitamins, pro-vitamins, minerals, microorganisms, prebiotics, probiotics, trace elements, essential and/or highly unsaturated fatty acids, antibiotics, nutritional supplements, enzymes, formulations containing zidovudine, macromolecular polypeptides, aromatic nitro and nitroso compounds and their metabolites useful as anti-viral and anti tumor agents, HIV protease inhibitors, antibiotics, viruses, pigments, steroids, oligopeptides, dipeptides, amino acids, flavor components, fragrance components, detergents and surface-active components, lipid derivatives of phosphonatides, amphiphilic polymers, adenosine derivatives, sulfated tannins, monoclonal antibodies, and metal complexes of water-soluble texathyrin.

27. (Canceled)

28. (Withdrawn) A food composition comprising:
an encapsulated product according to Claim 21; and
a food product selected from the group consisting of ready-to-eat breakfast cereals, snacks, soups, salads, cakes, cookies, crackers, ice creams, yogurts, puddings, custards, baby foods, medicinal foods, sports bars, and beverages.

29. (Previously Presented) A food topping comprising an encapsulated product according to Claim 21 in granular form.

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30-45. (Canceled)

46. (Withdrawn) An edible product for human or animal consumption comprising an encapsulated product, said encapsulated product being obtained by admixing (a) at least one plasticizable matrix material, (b) a liquid plasticizer, (c) an encapsulant in an amount of about 1% by weight to about 85 % by weight, based upon the weight of the matrix material, (d) a matrix component which is substantially non-plasticizable at temperatures lower than the decomposition temperature of the encapsulant, and (e) at least one component for controlling the rate of release of the encapsulant,

wherein the substantially non-plasticizable matrix component comprises an at least substantially non-gelatinized starch,

wherein said at least one plasticizable matrix material comprises at least one member selected from the group consisting of high gluten content flours, gluten from wheat, durum wheat, durum semolina, pregelatinized starch, pentosans, hydrocolloids, and mixtures thereof, and

wherein said encapsulant comprises at least one member selected from the group consisting of enzymes, vitamins, micronutrients, and live microorganisms.

47. (Previously Presented) An encapsulated product as claimed in claim 21 wherein the encapsulated product is obtained from a formable mixture which is extruded through a die having multiple apertures, at a rate of extrudate per die area of less than about 5 kg/h per mm².

48. (Previously Presented) An encapsulated product as claimed in claim 47, wherein the rate of extrudate per die area is less than 3 kg/h per mm².

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49. (Previously Presented) An encapsulated product as claimed in claim 48, wherein the rate of extrudate per die area is less than about 0.5 kg/h per mm².

50. (Previously Presented) An encapsulated product as claimed in claim 47, wherein the diameter of the apertures is from about 0.3 mm to about 5 mm.

51. (Previously Presented) An encapsulated product as claimed in claim 47, wherein the diameter of the apertures is from about 0.5 mm to about 1 mm.

52. (Previously Presented) An encapsulated product as claimed in claim 47, wherein the diameter of the apertures is from about 0.3 mm to about 5 mm.

53. (Withdrawn) An encapsulated product as claimed in claim 104, wherein said liquid encapsulant component comprises at least one enzyme.

54. (Previously Presented) An encapsulated product as claimed in claim 21, wherein the amount of said at least one plasticized matrix material is at least about 30 % by weight based upon the weight of the encapsulated product.

55. (Previously Presented) An encapsulated product as claimed in claim 104, wherein said at least one plasticizable matrix material is admixed with said liquid encapsulant component in solid form.

56. (Canceled)

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57. (Previously Presented) An encapsulated product as claimed in claim 26, wherein the amount of said at least one plasticized matrix material is at least about 30 % by weight based upon the weight of the encapsulated product.

58. (Canceled)

59-60. (Canceled)

61. (Withdrawn) An edible product as claimed in claim 46 wherein a liquid encapsulant component which contains an active, sensitive encapsulant dissolved or dispersed in a liquid plasticizer is admixed with said at least one plasticizable matrix material.

62. (Withdrawn) An edible product as claimed in claim 46 wherein said at least one plasticizable matrix material comprises at least one member selected from the group consisting of high gluten content flours, gluten from wheat, durum flour, and durum semolina.

63. (Withdrawn) An edible product as claimed in claim 61 wherein said encapsulant comprises at least one enzyme.

64. (Withdrawn) An edible product as claimed in claim 46 wherein the content of said at least one plasticizable matrix material is at least about 30% by weight.

65. (Withdrawn) An edible product as claimed in claim 46 wherein said at least one plasticizable matrix material comprises semolina.

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66. (Previously Presented) An encapsulated product according to Claim 47 wherein said formable mixture is extruded by a single screw or twin screw extruder.

67. (Previously Presented) An encapsulated product according to Claim 47 wherein said formable mixture is obtained by admixing ingredients in an extruder and the formable mixture is extruded from the extruder to obtain pieces.

68-95. (Canceled)

96. (Previously Presented) An encapsulated product according to Claim 21, wherein the hydrophobic agent is selected from the group consisting of fats, oils, waxes, fatty acids, and synthetic polymers.

97. (Previously Presented) An encapsulated product according to Claim 21, wherein the hydrophobic agent comprises an oil.

98. (Withdrawn) An encapsulated product according to Claim 21, wherein the encapsulant comprises a probiotic.

99. (Previously Presented) An encapsulated product according to Claim 21, wherein the encapsulant comprises live *lactobacilli*. /

100. (Withdrawn) An encapsulated product according to Claim 21, wherein the encapsulant comprises an enzyme.

101. (Previously Presented) An encapsulated product according to Claim 21, wherein a liquid encapsulant component comprising the encapsulant and a liquid

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plasticizer provides at least a substantial portion of liquid plasticizer for plasticizing at least one plasticizable matrix material and the amount of hydrophobic agent is about 5% to about 70% by weight, based upon the weight of the at least one plasticizable matrix material.

102. (Previously Presented) An encapsulated product according to Claim 101, comprising about 10% to about 35% by weight of the hydrophobic agent, based upon the weight of the at least one plasticizable matrix material.

103. (Currently Amended) An encapsulated product according to Claim 21, wherein the durum ingredient is selected from the group consisting of at least one of durum semolina, durum granular, durum flour, and mixtures thereof.

104. (Previously Presented) An encapsulated product, comprising:
at least one plasticized matrix material comprising a biopolymer; and
an encapsulant selected from the group consisting of live *lactobacilli*, a probiotic, a prebiotic, and an enzyme;

wherein a liquid encapsulant component comprising the encapsulant and a liquid plasticizer provides at least a substantial portion of liquid plasticizer for forming the at least one plasticized matrix material, and

wherein said encapsulated product is in a substantially non-expanded particulate form.

105. (Previously Presented) An encapsulated product according to Claim 104, wherein the biopolymer comprises a carbohydrate.

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106. (Previously Presented) An encapsulated product according to Claim 104, further comprising a hydrophobic agent for controlling the rate of release of the encapsulant.

107. (NEW) An encapsulated product as claimed in claim 104, wherein the encapsulant is at least substantially uniformly distributed in the plasticized matrix material.

108. (NEW) An encapsulated product as claimed in claim 21 comprising about 3% by weight to about 50% by weight of the encapsulant, based upon the weight of the matrix material.

109. (NEW) An encapsulated product as claimed in claim 21 comprising about 5% by weight to about 30% by weight of the encapsulant, based upon the weight of the matrix material.